

# ■■ OMEGA Health–Routing–Compliance Flow

**\*\*Purpose\*\*:** Ensure that OMEGA's digital civilization is not only alive but also healthy, resilient, and doctrinally compliant. Self-registration establishes identity; ServiceMesh operationalizes health and routing; Praetorian & Degraded Mode ensure resilience; Genesis Health Sentinel enforces doctrine.

## Self-Registration

- Agents, Titans, Tools self-register via MCP metadata & Federation Core.
- Provides identity and passports (who exists).

## ServiceMesh

- Probes and validates endpoints.
- Publishes health snapshots to `omega:health`.
- Routes traffic with health-aware load balancing.

## Circuit Breaker

- Prevents cascading failures.
- OPEN/HALF\_OPEN/CLOSED states with timeouts & thresholds.

## Praetorian Guard (Agent + Consumers + Sidecar)

- Agent: Generates health reports, resurrection plans, exposes MCP tools.
- Consumer: Subscribes to health feed; restarts/quarantines services.
- Sidecar: Sovereign watchdog; triggers Genesis respawn if lock lapses.

## Degraded Mode

- Graceful capability reduction under stress.
- NORMAL → REDUCED → MINIMAL → EMERGENCY.
- Masks non-essential capabilities (e.g., multimodal, streaming).

## Genesis Health Sentinel

- Doctrinal compliance auditor.
- Detects violations: quorum breaches, cascading failures, instability.
- Creates remediation tasks; delegates to Orchestrator.

- Service wrapper exposes /status, /violations, /metrics.

## ■ TL;DR

Self-registration = Identity

ServiceMesh + Circuit Breaker = Operational health & routing

Praetorian = Protection & healing

Degraded Mode = Graceful survival

Genesis Health Sentinel = Doctrine & law enforcement